



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

November 1, 2005

MEMORANDUM

SUBJECT: National Remedy Review Board Recommendations for the Holden Mine Site

FROM: Jo Ann Griffith, Chair
National Remedy Review Board

A handwritten signature in black ink, appearing to read "Jo Ann Griffith", is written over the printed name and title.

TO: Dan Opalski, Director
Office of Environmental Cleanup
Region 10

Purpose

The National Remedy Review Board (NRRB) has completed its followup review of the proposed cleanup action for the Holden Mine Site in Chelan County, Washington. This memorandum documents the NRRB's advisory recommendations.

Context for NRRB Review

The Administrator announced the NRRB as one of the October 1995 Superfund Administrative Reforms to help control response costs and promote consistent and cost-effective decisions. The NRRB furthers these goals by providing a cross-regional, management-level, "real time" review of high cost proposed response actions prior to their being issued for public comment. The Board reviews all proposed cleanup actions that exceed its cost-based review criteria.

The NRRB evaluates the proposed actions for consistency with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and relevant Superfund policy and guidance. It focuses on the nature and complexity of the site; health and environmental risks; the range of alternatives that address site risks; the quality and reasonableness of the cost estimates for alternatives; regional, state/tribal, and other stakeholder opinions on the proposed actions, and any other relevant factors.

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Generally, the NRRB makes advisory recommendations to the appropriate regional decision maker. The Region will then include these recommendations in the administrative record for the site, typically before it issues the proposed cleanup plan for public comment. While the Region is expected to give the Board's recommendations substantial weight, other important factors, such as subsequent public comment or technical analyses of response options, may influence the final regional decision. The Board expects the regional decision maker to respond in writing to its recommendations within a reasonable period of time, noting in particular how the recommendations influenced the proposed cleanup decision, including any effect on the estimated cost of the action. It is important to remember that the NRRB does not change the Agency's current delegations or alter in any way the public's role in site decisions.

Overview of the Proposed Action

Much of the Holden Mine Site is located on National Forest Service land, although a portion of the site is private land. The Forest Service is serving as the lead agency for response action at the site. The site located in a remote area near Lake Chelan and is the located of Holden Village, which serves as an interdenominational retreat. The site was mined from 1938 to 1957 producing copper, zinc, gold, and silver. The waste rock, tailings, and mine discharge are on-going sources of releases of metals to both groundwater and surface water. The site is being addressed under both the Superfund statute (Comprehensive Environmental Restoration and Compensation Liability Act- CERCLA) and the State of Washington's Model Toxics Control Act (MTCA).

The Agencies' preferred alternative (APR) that was presented to the Board included the construction of a groundwater barrier system, collecting and treating water from the underground mine and groundwater, excavating and disposing of soils, and regrading/revegetating tailings and waste rock piles. Additionally the alternative includes institutional controls, hydraulic bulkhead installation in some mine portals, and reclamation of Railroad Creek to remove ferricrete and to improve channel stability. The estimated cost of the proposal is \$38 million.

NRRB Advisory Recommendations

The NRRB reviewed the information package describing this proposal and discussed related issues with Dave Einan and Jennifer McDonald from EPA Region 10 as well as with Don Abbott and Rick Roeder (Washington State Department of Ecology), Norm Day (U.S. Forest Service), Jim Alexander (U.S. Department of Agriculture's Office of General Counsel), and Andy Fitz (Washington State Attorney General's Office) on October 5, 2005. Based on this review and discussion, the Board offers the following comments:

1. The Holden site consists of two primary areas – the area west of Copper Creek¹ which, based on the information presented to the Board, represents the major contaminant

¹ The area referenced in these comments as the area west of Copper Creek includes both the "West Area" cited in the package and Tailings Pile 1.

source, and the eastern area which includes tailing piles 2 and 3. The APR includes the construction of a ground water collection system along the western and eastern areas to intercept groundwater flow to Railroad Creek. The Board believes that additional information is needed to characterize ground water flow conditions and contaminant loading under tailing piles 2 and 3.

Therefore, the Board recommends that the remedy be implemented in a phased manner, focusing initial efforts on the contaminant sources in the area west of Copper Creek (allowing the benefits of the initial actions on Railroad Creek to be considered in determining the need for additional remedial action to address the eastern contaminant sources).

Alternatively, additional investigation could be undertaken prior to construction (including the recommendations in comment #2 below), to better define the contaminant contributions from the eastern contaminant sources (e.g., tailings piles 2 and 3), and therefore, to better define the scope of ground water collection and other appropriate remedial actions for these areas, allowing the construction to be completed in a single phase. The Board further notes that in either case, pull-back and re-grading of the tailing piles appears to be a necessary component of the remedy in an early phase.

2. The Board was not presented with adequate information regarding loadings to Railroad Creek, especially those associated with the relative contributions of different sources. The Board recommends that a loadings analysis be conducted which includes flow measurement of surface water at several transects across Railroad Creek and at all identifiable seeps/tributaries that enter the creek within the study area. Sampling should be performed synoptically. From these measurements, the Agencies' might then determine how much contaminant loading is contributed by groundwater along tailing piles 2 and 3, to help inform decision-making about actions necessary to control ground water releases from the eastern area.
3. The Board recognizes the importance of collecting contaminated ground water at this site. However, the package presented to the Board does not contain adequate information to support the effectiveness of a partially penetrating barrier wall and groundwater collection ditch as a component of the preferred remedy. For example, the Agencies indicated during the meeting that the effectiveness of the barrier wall is uncertain, with estimates ranging from 50 to 80 percent reduction in groundwater flow. The subsurface characterization information and ground water flow modeling presentation in the package is too limited to determine if the partially penetrating barrier wall and collection ditch will capture a significant portion of the contaminant load currently discharging to Railroad Creek. The Board recommends that adequate characterization data supporting the use of the partially penetrating wall be referenced in the decision documents and that an appropriate sensitivity analysis be conducted to evaluate uncertainty of the data. The Agencies' should provide details in the decision documents to address how the proposed remedy will effectively capture contaminated ground water.

4. The Agencies' preferred alternative includes the construction and operation of a low-energy, two-stage system to treat collected groundwater. The package provided to the Board did not contain specific information about the system. The Board recommends that the Agencies evaluate whether or not a single-stage treatment system could be operated at a pH that provides acceptable removal of all metals of concern. The Board also recommends that the effectiveness of the proposed low-energy treatment unit be carefully considered during design. Further, the Agencies should also evaluate the potential benefits of treating low-aluminum sources only in stage two if a two-stage treatment system is needed.
5. In its position letter to the Board, Intalco questioned the cost estimate for the Agencies' preferred alternative. The Agencies' package identified the APR cost to be approximately \$40 million. In contrast, Intalco estimated a cost closer to \$70 million, or about \$30 million higher. The Board recommends that the Agencies' clarify the basis for the cost estimate difference in its response to the Board comments.
6. The Board notes that the remedial action objectives include restoring surface water to support aquatic life. The Board recommends that the decision documents make clear the relationship between this remedial action objective and the water quality criteria and standards. In addition, the Board notes its support for the planned monitoring of fish and other aquatic life to document recovery.
7. The Holden Village Inc. letter to the Board indicated concern for community disruption during construction. The Board recommends that the site team continue to work with the village in exploring ways to reduce adverse impacts on village operations.

The NRRB appreciates the Agencies' efforts in working together with the potentially responsible parties, and the community groups at this site. We request that a draft response to these findings be included with the draft Proposed Plan when it is forwarded to your OSRTI Regional Support Branch for review. The Regional Support Branch will work with both myself and your staff to resolve any remaining issues prior to your release of the Proposed Plan. Once your response is final and made part of the site's Administrative Record, then a copy of this letter and your response will be posted on the NRRB website.

Thank you for your support and the support of your managers and staff in preparing for this review. Please call me at (703) 603-8774 should you have any questions.

cc: M. Cook (OSRTI)
E. Southerland (OSRTI)
S. Bromm (OSRE)
J. Woolford (FFRRO)
Rafael Gonzalez (OSRTI)
NRRB members